

Customer No.: 31561
Docket No.: 11584-US-PA
Application No.: 10/708,446

To the Claims:

Claim 1. (currently amended) A cascade liquid crystal display (LCD) driving circuit, comprising:

a plurality of driving circuit units, coupling in cascade fashion, for outputting a data signal to drive a LCD;

a plurality of differential transmitters, for generating a differential signal and transmitting ~~which~~ the differential signal to a next stage of the driving circuit unit, each of the driving circuit units being disposed with one of the differential transmitters; and

a plurality of differential receivers, for receiving the differential signal from a previous stage of the driving circuit units, each of the driving circuit units being disposed with one of the differential receivers, wherein the differential signal transmitter comprises a signal amplifier, which converts and amplifies the differential signal before the differential signal is transmitted from the differential signal transmitter.

Claim 2. (original) The cascade LCD driving circuit as recited in claim 1, wherein the differential signal transmitter comprises:

a current source, for providing current that is required by the differential signal transmitter; and

a first transistor, a second transistor, a third transistor, and a fourth transistor, wherein a drain of the first transistor and a drain of the second transistor

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are coupled to the current source, a source of the first transistor is coupled to a drain of the third transistor where a first signal is drawn, a source of the second transistor is coupled to a drain of the fourth transistor where a second signal is drawn, sources of the third and the fourth transistors are coupled to ground voltage, and the first signal associated with the second signal is the differential signal.

Claim 3. (original) The cascade LCD driving circuit as recited in claim 1, wherein the differential signal transmitter comprises a signal amplifier, which converts and partially amplifies the differential signal before the differential signal is transmitted from the differential signal transmitter.

Claim 4. (currently amended) The cascade LCD driving circuit as recited in claim 3, wherein the amplifier comprises:

a first current source and a second current source;

a first resistor and a second resistor, a second terminal of the first resistor and a second terminal of the second resistor are coupled to ground voltage; and

a first sensor switch, a second sensor switch, a third sensor switch, and fourth sensor switch, a first terminal of the first sensor switch and a first terminal of the second sensor switch are coupled to the first current source, a first terminal of the third sensor switch and a first terminal of the fourth sensor switch are coupled to the second current source, a second terminal of the first sensor switch

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and a second terminal of the third sensor switch are coupled to a first terminal of the first resistor where a first signal is drawn, a second terminal of the second sensor switch and a second terminal of the fourth sensor switch are coupled to the a first terminal of the second resistor where a second signal is drawn, the first signal associated with the second signal is the differential signal that is amplified, wherein

~~if performing amplification, the first sensor switch and the third sensor switch are turned on, and the second sensor switch and the fourth sensor switch are turned off, and~~

~~if not performing amplification, the first sensor switch and the third sensor switch are turned off, and the second sensor switch and the fourth sensor switch are turned on.~~

Claim 5. (new) The cascade LCD driving circuit as recited in claim 4, if performing amplification, the first sensor switch and the third sensor switch are turned on, and the second sensor switch and the fourth sensor switch are turned off, and

if not performing amplification, the first sensor switch and the fourth sensor switch are turned off, and the second sensor switch and the third sensor switch are turned on.